

REMARKS

In the Office Action, the Examiner indicated that claims 1 through 15 are pending in the application and the Examiner objected to claims 3, 4, 6, 12, 14 and 15, and rejected claims 1, 2, 5, 7-11, and 13.

The Objected-to Claims

On page 5 of the Office Action, the Examiner indicated that claims 3, 4, 6, 12, and 14-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Applicant thanks the Examiner for this indication of allowability and will consider making the suggested claim amendments in a subsequent response.

Claim Rejections, 35 U.S.C. §102

In item 2 on page 2 of the Office Action, the Examiner rejected claims 1 and 9-11 under 35 U.S.C. §102(e) as being anticipated by PCT Publication No. WO 01/58173 to Pillozzi et al. ("Pillozzi '173").

Rejection of Claims 2, 5, 7, 8 and 13 under 35 U.S.C. §103(a)

At item 4 on page 3 of the Office Action, the Examiner rejected claims 2, 5, 7, 8 and 13 under 35 U.S.C. §103(a) as being unpatentable over Pillozzi '173 in view of U.S. Patent No. 6,456,651 to Pillozzi (Pillozzi '651).

The Present Invention

In accordance with the invention, transmissions between a subscriber and a service provider in the upstream direction are improved by correcting for a phase offset between the subscriber and the service provider. One aspect of the invention provides for a method of sending a single-phase training signal from the subscriber to the service provider; receiving the single-phase training signal at the service provider; calculating the phase offset between the subscriber and the service provider based upon the received single-phase training signal; transmitting the calculated phase offset from the service provider to the subscriber; and pre-adjusting a new signal transmitted from the subscriber to the service provider based upon the transmitted phase offset. The service provider, under this method, is synchronized to a network clock.

PCT Publication No. WO 01/58173 to Pillozzi et al.

PCT Publication No. WO 01/58173 to Pillozzi et al. ("Pillozzi '173") teaches a system and method for adjusting the phase of the analog signal produced by an analog modem connected to a digital modem over a telephone network. Of particular relevance to the present Office Action is the computing of a phase estimate using the quantized samples of a known-referenced signal. A phase offset is calculated by comparing the phase estimate to an optimum phase value. A digital modem then sends the calculated phase offset information to the analog modem. The analog modem then delays its transmitted signal by the phase offset. After the phase of the analog modem's transmitter is adjusted, the analog signal reaches the codec at the phase desired by the digital modem.

The only method for computing the phase estimate described in "Pillozzi '173"

utilizes a dual-phase probing signal as described in U.S. Patent No. 6,456,651 to Pillozzi ("Pillozzi '651").

U.S. Patent No. 6,456,651 to Pillozzi et al.

U.S. Patent No. 6,456,651 to Pillozzi et al. teaches a method and apparatus for optimizing the fractional sampling phase offset in the upstream direction to maximize the upstream data rate. Of particular relevance to the present Office Action is the fact that "Pillozzi '651" teaches a dual-phase probing signal.

The Cited Prior Art Does Not Anticipate the Claimed Invention

The MPEP and case law provide the following definition of anticipation for the purposes of 35 U.S.C. §102:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP §2131 citing *Verdegaal Bros. v. Union Oil Company of California*, 814 F.2d 628, 631, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987)

The Examiner Has Not Established a *prima facie* Case of Anticipation

As noted above, the present claimed invention includes a single-phase training signal used to correct for the phase offset between a subscriber line and a service provider. This single-phase training signal is now explicitly claimed in each of the claims. Neither "Pillozzi '173" nor "Pillozzi '651" teach the use of a single-phase training signal. Accordingly, each of the independent claims, and all claims depending therefrom, patentably define over Pillozzi '173 and are in condition for allowance.

The Examiner has not Established a *prima facie* Case of Obviousness

As set forth in the MPEP:

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skilled in the art, to modify the reference or to combine reference teachings.

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As noted above, the present invention as claimed requires a single-phase training signal to be utilized in connection with the phase offset correction. Also, as noted above, neither "Pillozzi '651" nor "Pillozzi '173" teach or suggest the use of a single-phase training signal; instead, each of these references teach only the use of a dual-phase probing signal in connection with phase adjustments. Without such a teaching or suggestion, a rejection of the claims based on "Pillozzi '173" or "Pillozzi '651", either alone or in combination, is not appropriate. Accordingly, Claims 2, 5, 7, 8 and 13 patentably define over "Pillozzi '173" and "Pillozzi '651", both alone or in combination, and are in condition for allowance.

Conclusion

The present invention is not taught or suggested by the prior art. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection of the claims. An early Notice of Allowance is earnestly solicited.

Enclosed herewith, in triplicate, is a Petition for extension of time to respond to the

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Examiner's Action. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment associated with this communication to Deposit Account No. 19-5425.

Respectfully submitted

May 10, 2004

Date



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